10

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,277	02/06/2001	Takaki Waritani	2000_1588A	3690

513 7590 04/19/2004

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER	
GRUN, JAMES LESLIE	
ART UNIT	**PAPER NUMBER**
1641	

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/762,277	WARITANI ET AL.	
	Examiner	Art Unit	
	James L Grun	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 5-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 5-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Technology Center 1600, Group 1640, Art Unit 1641.

The amendment filed 25 November 2003 is acknowledged and has been entered. Claims 10-16 are newly added. Claims 2 and 4 have been cancelled. Claims 1, 3, and 5-16 remain in the case.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The disclosure is objected to because of the following informalities: the specification is replete with grammatical, idiomatic, and spelling errors and should be carefully revised. Appropriate correction is required.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention, and failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

Claims 8, 9, and 13-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification, as originally filed, in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the invention as is now claimed, and which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

With regard to claims 8, 9, and 13-16, the specification, as originally filed, does not provide support for a "kit" as is now claimed. Applicant's specification describes immunoassay methods, reagents, and devices. Although one of skill in the art might realize from reading the disclosure that kits are useable in the invention, such possibility of use does not provide explicit or implicit indication to one of skill in the art that kits containing the described reagents or devices were originally contemplated as part of applicant's invention and such possibility of use does not satisfy the written description requirements of 35 U.S.C. § 112, first paragraph. Note that a description which renders obvious a claimed invention is not sufficient to satisfy the written description requirement. Applicant is requested to direct the Examiner's attention to specific passages where support for these newly recited limitations can be found in the specification as filed or is required to delete the new matter.

With further regard to claims 13-16, applicant describes sandwich immunoassay methods, reagents, and devices in which both immobilized and free labelled monoclonal antibodies are

specific for the trypsin(ogen) antigen. Applicant's specification does not provide written description of, or broad enabling support for, reagents or devices wherein only one of the antibodies is monoclonal or wherein only one of the monoclonal antibodies is antigen specific. One would not know, absent further written description or guidance from applicant, what second antibody to use in the sandwich immunoassay format described by applicant other than a second monoclonal antibody specific for the same antigen as the first monoclonal antibody and capable of binding the antigen in a sandwich therewith. Applicant is requested to direct the Examiner's attention to specific passages where support for these newly recited limitations can be found in the specification as filed or is required to delete the new matter.

Claims 10-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification, as originally filed, in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the invention as is now claimed, and which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

With regard to claims 10-12, applicant describes sandwich immunoassay methods, reagents, and devices in which both immobilized and free labelled monoclonal antibodies are specific for the trypsin(ogen) antigen. Applicant's specification does not provide written

description of, or broad enabling support for, reagents or devices wherein only one of the antibodies is monoclonal or wherein only one of the monoclonal antibodies is antigen specific. One would not know, absent further written description or guidance from applicant, what second antibody to use in the sandwich immunoassay format described by applicant other than a second monoclonal antibody specific for the same antigen as the first monoclonal antibody and capable of binding the antigen in a sandwich therewith. Applicant is requested to direct the Examiner's attention to specific passages where support for these newly recited limitations can be found in the specification as filed or is required to delete the new matter.

Claims 6, 7, and 9-16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6 and claims dependent thereupon, the interrelationships of the method components are not clear, e.g.: it is not clear how the contacting step relates to the assaying step in claim 6; or, it is not clear how the monoclonal antibodies of the dependent claims interrelate to that of the independent claim. In these claims "the presence" lacks antecedent basis. In claims 10-12, "a" monoclonal antibody should be "the" monoclonal antibody for proper reference to the antecedent component. Also in claims 10-12, "the concentration" lacks antecedent basis.

Claim 9 does not appear to further limit any component of claim 8 as the claim merely limits the intended use recitation of the preamble of claim 8.

In claims 13-16, the interrelationships of the components are not clear, e.g. it is not clear how the antibodies of the dependent claims interrelate to the monoclonal antibody of the independent claim. In these claims, "a" monoclonal antibody should be "the" monoclonal antibody for proper reference to the antecedent component.

Applicant's arguments filed 25 November 2003 have been fully considered but they are not deemed to be persuasive. Applicant urges that trypsin may exist in vivo in complexed forms and thus recitation of the different forms is further limiting. This is not found persuasive because the intended use of the kit does not further limit the same monoclonal antibody as claimed in claims 8 and 9.

Claims 1, 3, and 5-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pinsky et al. (Mol. Cell. Biol. 5(10): 2669, 1985) with Borgström et al. (Hoppe-Seyler's Z. Physiol. Chem. 361: 625, 1980), Campbell (1984), Harlow et al., and Maurer et al., and further in view of Campbell (1991) and Borgström et al. for reasons similar to those of record in the prior rejection of the similar subject matter of claims 1-9.

The teachings of the references are as set forth in the previous Office action.

It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to have elicited antibodies to any peptide epitope of a canine trypsinogen protein sequence as disclosed by Pinsky et al. because the canine trypsinogen proteins are of unquestioned research interest, its is conventional in the art to elicit antibodies to sequenced

proteins for a variety of uses as taught in either of Campbell or Harlow et al., antibodies specific for either cationic or anionic canine trypsinogens, because of the limited cross-reactivities of the different forms, for use in immunoassays were notoriously old and well known as taught in Borgström et al., and one of ordinary skill in the art would have had an extremely reasonable expectation of success in achieving the expected result, i.e. generating antibodies, either polyclonal or monoclonal antibodies specifically reactive with specific peptide epitopes in either of the cationic or anionic canine trypsinogen proteins, using synthetic peptide immunogens derived from the sequences of the canine trypsinogen proteins, taught in Pinsky et al., in conjunction with notoriously old and well known conventional techniques as taught by Harlow et al. and Maurer et al. See Ex parte Erlich (3 USPQ2d 1011 (BPAI 1987)). One would have reasonably expected antibodies specific for the different charged forms of the proteins in view of the multiple amino acid differences in their sequences, taught in Pinsky et al., which would have provided multiple different peptides for immunization. It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to have substituted the monoclonal antibodies taught by the combination of Pinsky et al. with Borgström et al., Campbell (1984), Harlow et al., and Maurer et al. in the immunoassays of Borgström et al. because Campbell (1991) teaches that such a substitution is obvious to one of ordinary skill in the art. One would have had obvious motivation to have generated monoclonal antibodies in order to provide a potentially unlimited source of homogeneous reagent for uses such as affinity purification, functional studies, clinical studies of the proteins, or to standardize the assay of

Borgström et al., as modified. It would have been obvious to have provided any of the conventional detectable labels on the antibodies as such labelling is conventional in the art for, inter alia, detection of antibody binding. It would have been further obvious to formulate the reagents of Borgström et al., as modified, into a kit since that is conventional for convenience, economy, and reproducibility.

Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinsky et al. with Borgström et al., Campbell (1984), Harlow et al., Maurer et al., and Campbell (1991) as applied to claims 1, 3, and 5-9 above, and further in view of David et al. (U.S. Pat. No. 4,376,110).

The teachings of Pinsky et al. with Borgström et al., Campbell (1984), Harlow et al., Maurer et al., and Campbell (1991) are as set forth previously and differ from the invention as instantly claimed in not teaching sandwich immunoassay formats as an alternative to the competitive format taught in Borgström et al. for determination of cationic or anionic canine trypsinogen proteins.

David et al. (4,376,110) teach sandwich immunoassays with monoclonal immunocapture and detection reagents which preferably bind to different epitopes on the same antigen (particularly col. 4 lines 19-33). The reference teaches that sandwich immunoassays may be

performed in either "forward" or "reverse" sequential formats or in simultaneous formats (col. 1, line 47, through col 2., line 46), and teaches the advantages of monoclonal antibodies particularly for simultaneous and reverse immunoassay formats (e.g. col. 3-4). Sandwich immunoassays are an alternative to competition immunoassay formats for detection of polyvalent antigens (e.g. col. 1). Sandwich immunoassays with monoclonal antibodies were more sensitive and, in some method formats, reached equilibrium more rapidly than corresponding assays with polyclonal antibodies (col. 8, lines 11-38). In the "forward" sandwich-type method with either polyclonal or monoclonal immunocapture reagents, however, maximum binding of analyte occurred in less than 15 minutes (Figures 1 and 2). However, David et al do not teach anti-canine trypsinogen antibodies.

It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to have substituted a sandwich assay for the competitive assay of Borgström et al., as modified, for determination of cationic or anionic canine trypsinogen proteins because such substitution is well known in the art for determination of polyvalent antigens as taught in David et al. for the benefits taught therein of using labelled monoclonal antibody and obviating the need for labelled antigen.

Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

Applicant's arguments filed 25 November 2003 have been fully considered but they are not deemed to be persuasive in view of the NEW GROUNDS of rejection presented in this Office action necessitated by applicant's amendments. Applicant's arguments insofar as they apply to the instant rejections will be addressed. Applicant urges that the references of Pinsky et al. with Campbell (1984), Harlow et al., and Maurer et al. do not teach antibodies specific for cationic canine trypsin(ogen) as is now claimed and provide no motivation for their elicitation. This is not found persuasive in view of the additional teachings of Borgström et al., relied upon in the instant grounds of rejection, regarding the separate determination of cationic and anionic canine trypsinogen proteins with antibodies specific therefor and the limited cross-reactivities of these two charged forms to such antibodies. Applicant urges that Borgström et al. do not teach monoclonal antibodies in their assays. This is not found persuasive for the reasons of record in view of the express teachings in Campbell (1991) regarding the obviousness of such a substitution. Applicant further urges that Borgström et al. do not teach a clinical application. This is not found persuasive for the reasons of record in view of the determination in the reference of pancreatitis.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR REPLY TO THIS FINAL ACTION IS SET TO EXPIRE **THREE MONTHS** FROM THE MAILING DATE OF THIS ACTION. IN THE EVENT A FIRST REPLY IS FILED WITHIN **TWO MONTHS** OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE **THREE-MONTH** SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR REPLY EXPIRE LATER THAN **SIX MONTHS** FROM THE MAILING DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L. Grun, Ph.D., whose telephone number is (571) 272-0821. The examiner can normally be reached on weekdays from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, SPE, can be contacted at (571) 272-0823.

The phone numbers for official facsimile transmitted communications to TC 1600, Group 1640, are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application, or requests to supply missing elements from Office communications, should be directed to the Group receptionist whose telephone number is (571) 272-1600.

James L. Grun, Ph.D.
April 15, 2004

CHRISTOPHER L. CHIN
PRIMARY EXAMINER
GROUP ~~1800~~ 1641